

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A substrate holding apparatus ~~which holds a~~, in an exposure apparatus which exposes a sensitive surface of a flat-like substrate with an exposure beam, which holds the substrate, comprising:

a base member having a low thermal expansion coefficient; ~~and~~

a protrusion formed on the base member and having a substantially same shape as an outside shape of the substrate; and

a plurality of projecting support members disposed on said base member such that the projecting support members are arranged like a triangular lattice inside of the protrusion and distal end portions thereof are substantially positioned on a plane so as to respectively contact a different surface of the substrate from the sensitive surface, wherein

the substrate is to be placed on said plurality of support members.

2. (Original) A substrate holding apparatus as recited in claim 1, further comprising:

a suction mechanism which sucks the substrate placed on the plurality of support members toward said base member side.

3. (Currently Amended) A substrate holding apparatus as recited in claim 1, further comprising:

~~a ring-like closed protrusion formed on said base member so as to surround said plurality of support members; and~~

a gas suction portion which sucks gas inside the protrusion.

4. (Original) A substrate holding apparatus as recited in claim 2, wherein

said plurality of support members are disposed like a lattice of equilateral triangles each having one side with a length "a" [m], and

when a suction force per unit length is set as "p" [N/m] in the case of sucking the substrate toward the base member side, an allowable deformation amount is set as " δ_{\max} " [m] in the case of sucking the substrate, Young's modulus E of the substrate is set as E [Pa], and a thickness of the substrate is set as "t" [m], the length "a" of the equilateral triangle and the suction force "p" satisfy the following condition:

$$p \cdot a^4 \leq 18 \cdot E \cdot t^3 \cdot \delta_{\max}.$$

5. (Original) A substrate holding apparatus as recited in claim 4, wherein the substrate is a semiconductor substrate having a diameter of approximately 300mm, and the one side of the equilateral triangle has a length of 1mm-3mm.
6. (Original) A substrate holding apparatus as recited in claim 1, wherein said base member is coated on a surface thereof except for a part of a mounting surface for the substrate, said part being different from a contact surface with the substrate.
7. (Original) A substrate holding apparatus as recited in claim 1, further comprising:
a suction mechanism which is connected to said base member and which sets a suction force after the substrate is placed to be weaker than a suction force when the substrate is placed on said plurality of support members.
8. - 14. (Cancelled)
15. (Original) An exposure apparatus which exposes a second object with an exposure beam via a first object, comprising:
said substrate holding apparatus as recited in claim 1, wherein said substrate holding apparatus holds the second object as the substrate.

16. (Currently Amended) An exposure apparatus which illuminates a first object with an exposure beam, and exposes a sensitive surface of a second object with the exposure beam via the first object, comprising:

a holder having a protrusion formed in a substantially same shape as an outside shape of the second object, and a plurality of projecting support members disposed like a triangular lattice inside of the protrusion such that distal end portions thereof ~~which are to contact the second object~~ are positioned substantially on a plane so as to respectively contact a different surface of the substrate from the sensitive surface, the holder being formed of a material having a low thermal expansion coefficient, and

a stage system including a movable body in which said holder is provided.

17. (Original) An exposure apparatus as recited in claim 16, wherein

said stage system respectively moves the first and second objects relative to the exposure beam in order to scan and expose the second object with a beam generated from the first object by irradiation of the exposure beam.

18. (Original) An exposure apparatus as recited in claim 17, wherein

said plurality of support members are disposed like a lattice of isosceles triangles each having a base parallel with a second direction crossing a first direction along which the second object is moved at the scanning and exposure.

19. (Currently Amended) An exposure apparatus as recited in claim 18, wherein

the isosceles triangle has a height direction parallel with the first direction and has a ~~hight~~ height longer than the base.

20. (Currently Amended) An exposure apparatus as recited in claim 17, wherein

said plurality of support members which are ~~disaposed~~ disposed like a lattice of parallelograms each having two sides parallel with a second direction crossing a first direction along which the second object is moved at the scanning and exposure.

21. (Original) An exposure apparatus as recited in claim 17, wherein
said plurality of support members which are disposed like a lattice of
rhombuses each having a first width with respect to a first direction along which the second
object is moved and a second width with respect to a second direction crossing the first
direction, the first width being larger than the second width.

22. (Original) An exposure apparatus as recited in claim 16, wherein
said holder is coated on a surface thereof except for a part of a mounting
surface for the second object, said part being different from a contact surface with the second
object.

23. (Original) An exposure apparatus as recited in claim 16, further comprising:
a suction mechanism which is connected to said holder and which sets a suction
force after the second object is placed to be weaker than a suction force when the second
object is placed on said plurality of support members.

24. - 27. (Cancelled)

28. (Currently Amended) An apparatus according to claim 15, further comprising:
a suction mechanism which is connected to the base member in order for the
second object to be held to the base member, wherein

an interval of two projecting support members, which are disposed like a
triangular lattice, of said plurality of projecting support members is determined according to an
allowable deformation amount, a Young's modulus of the second object, and a thickness of the
second object when a suction force for the second object by the suction mechanism is set as
"p" [N/m], an allowable deformation amount of the second object in the case of sucking the
second object is set as " δ_{max} " [m], Young's modulus E of the second object is set as E [Pa],
and a thickness of the second object is set as "t" [m], a distance "a" of two of the plurality of

projecting support members disposed like the triangular lattice and the suction force "p"
satisfy the following condition:

$$\underline{p \cdot a^4 \leq 18 \cdot E \cdot t^3 \cdot \delta_{\max}.}$$

29. (Cancelled)
30. (Previously Presented) An apparatus according to claim 15, wherein
the second object is a semiconductor wafer having a diameter of approximately
300mm, and
the interval of two projecting support members, which are disposed like a
triangular lattice, of said plurality of projecting support members is set to approximately 1mm
to 3mm.
31. - 32. (Cancelled)
33. (Currently Amended) An apparatus according to claim 15, wherein
~~said base member is disposed surrounding said plurality of projecting support~~
~~members, and comprises a protrusion, a height of which the protrusion is set lower than a~~
height of said plurality of projecting support members.
34. (Previously Presented) An apparatus according to claim 33, wherein
said protrusion comprises second projecting support members different from
said projecting support members, distal end portions of said second projecting support
members being positioned on the same plane on which said distal end portions of said
projecting support members are positioned.
35. (Currently Amended) An apparatus according to claim 18, wherein
~~said holder is disposed surrounding said plurality of projecting support~~
~~members, and comprises a protrusion, a height of which the protrusion is set lower than a~~
height of said plurality of projecting support members.
36. (Previously Presented) An apparatus according to claim 35, wherein

said protrusion comprises second projecting support members different from said projecting support members, distal end portions of said second projecting support members being positioned on the plane on which said distal end portions of said projecting support members are positioned.

37. (Currently Amended) An apparatus according to claim 20, wherein ~~said holder is disposed surrounding said plurality of projecting support members, and comprises a protrusion, a height of which the protrusion is set lower than a height of said plurality of projecting support members.~~

38. (Previously Presented) An apparatus according to claim 37, wherein said protrusion comprises second projecting support members different from said projecting support members, distal end portions of said second projecting support members being positioned on the plane on which said distal end portions of said projecting support members are positioned.

39. (New) An apparatus according to claim 1, wherein said base member is coated on a surface thereof that contacts the substrate with a conducting material.

40. (New) An apparatus according to claim 39, wherein said base member is formed of a non-conducting material different from said coating layer on said surface.

41. (New) An apparatus according to claim 16, wherein said holder is coated on a surface thereof that contacts the second object with a conducting material.

42. (New) An apparatus according to claim 41, wherein said holder is formed of a non-conducting material different from said coating layer on said surface.